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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,637	03/17/2004	Kenneth R. Czerwinski	0492611-0546 (MIT 9986)	4916

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CHOATE, HALL & STEWART LLP
TWO INTERNATIONAL PLACE
BOSTON, MA 02110

EXAMINER

LILLING, HERBERT J

ART UNIT	PAPER NUMBER
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1657

MAIL DATE	DELIVERY MODE
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01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/802,637

Applicant(s)

CZERWINSKI ET AL.

Examiner

HERBERT J. LILLING

Art Unit

1657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 4, 2007 January 10, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-154 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23, 37-57, 60, 61, 63-65, 67-69, 71-84, 86-96, 101-107, 121-133, 136-143 and 146-153 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 24-36, 58-59, 62, 66, 70, 85, 97-100, 108-120, 134, 135, 144-145 and 154 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>May 04, 2007</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 24-36,58,59,62,66,70,85,97-100,108-120,134,135,144,145 and 154:

1. Receipt is acknowledged of an election response filed January 10, 2008.
2. Claims 1-154 are pending in this application.
3. Applicant has elected Group I,
claims: 1-23, 37-84, 86-96, 101-107, 121-133, 136-143 and 146-153,

drawn to a method for separating isotopes of an actinide element using actinide element reducing microorganisms.
with the further election of species :

- A(a). Uranium;
- B(2)(c). *Shewanella oneidensis*;
- C(iii). whereby the microorganisms may have or may not have a gene which encodes a protein that reduces an actinide element; and
- D(a). whereby the microorganisms are facultative aerobes.

As required, Applicants submit that

Claims: 1-23, 37-57, 60, 61, 63-65, 67-69, 71-84, 86-96, 101-107, 121-133, 136-143, and 146-153

read on the elected species.

Therefore, claims withdrawn from consideration.

Claims 24-36, 58-59, 62, 66, 70, 85, 97-100, 108-120, 134, 135, 144-145 and 154 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected invention or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 10, 2008.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. In accordance with this Tech Center Policy based on above restriction containing product claims and process claims, this Examiner will rejoin any non-elected process claims upon the election of a product claim which is subsequently is found allowable in view of the following guidelines:

F.P.: Ochiai/Brouwer Rejoinder form paragraph

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised

that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-23, 37-57, 60, 61, 63-65, 67-69, 71-84 and Claims 86-96, 101-107, 121-133, and claims 136-143, and claims 146-153 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for specific examples, does not reasonably provide enablement for the claimed language commensurate in scope with the enabling disclosure. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and practice the invention with these claims commensurate in scope with the enabling disclosure.

Please note that the language of the claims must make it clear what subject matter the claims encompass to adequately delineate their "metes and bounds" because before claimed subject matter can properly be compared to the prior art, it is essential to know what the claims do in fact cover. 1975).

Claims 1-23, 37-57, 60, 61, 63-65, 67-69, 71-84 and claims 86-96 and claims 101-107, 121-133 and claims 136-143, and 146-153 fail to comply with the above decisions.

The composition requires "molecules" comprising an element which molecular structure has not been fully disclosed as well as enabled to make and practice the instant invention without "undue experimentation".

In addition, the term "exposing" involves process steps which the instant claims lack the necessary steps to carry out the "formation of a precipitate" which "precipitate" structure or compound commensurate in scope with the claimed language is not supported in the instant specification as to the enabling disclosure.

The claims recite that the "precipitate contains a higher proportion of the second isotope relative to the first isotope than was present in the original composition, thereby effecting a separation of the first and second isotopes" but the claim lacks the essential step(s) for : "thereby effecting a separation of the first and second isotopes" since both precipitants form a mixed precipitant which essential separation process step is not disclosed in the claim.

Claim 136 recites the "removing the reduced actinide element" but the specification does not support an element but a compound containing an element.

The search of the patent literature based on the claimed language may be reasonable due to classification of the classes but absolutely no meaningful computerized search and examination based on an element of an unknown unlimited number of compounds containing an element.

This examiner has attempted to search the patent literature and has reviewed all of the prior art submitted as noted by the annotated prior art on the web site without any art pertaining to the claimed subject matter. However, a proper computerized search cannot be performed absent an enabling composition containing the structures of the actinide compounds as well as the actinide precipitants and the processes.

Another factor is that there is no guidance as to which "reducing microorganism(s)" will be enabled to form the precipitant with which compound(s) or procedures which the claims lack these essential compounds or process steps.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23, 37-57, 60, 61, 63-65, 67-69, 71-84 and claims 86-96, and claims 101-107, 121-133 and claims 136-143, and claims 146-153 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. For Claims 1 and 86 and 101:

i- What is the scope of the "molecules" in the expression "composition comprising molecules comprising...."?

ii- What is the scope of the term "exposing" in the expression "exposing the molecules"?

iii- What is the scope of the "reducing microorganisms" which allows "formation of a precipitate" since the specification indicates a number of different

microorganism fail to provide a suitable precipitate but no guidance as to which ones will be able to provide the enabling disclosure?

iv- Claim 1 indicates that "precipitate contains a higher proportion of the second isotope relative to the first isotope than was present in the original composition, thereby effecting a separation of the first and second isotopes" which expression "effecting a separation " is vague and indefinite as to "effecting" this separation for a mixed precipitant. What is the scope of "effecting" process step to separate the mixture?

What is the scope of the term "precipitate" which is a process step but does not define the structure of compound formed?

What is the scope of the term "suitable" in the expression "using any suitable process"?

What is the scope of the term "process" in the expression "using any suitable process" and what is the "process"?

B. Claims 9 -15 are vague and indefinite as to the claimed scope of "performed for a time selected for a time selected to achieve reduction of less thanof the actinide element" as since there are two actinide elements in claim 1.

C. Claim 136 recites "removing the reduced element" but the actinide is not in elemental form but as part of a molecule which renders the claim vague and indefinite.

8. **No claim is allowed.**

9. The references of record provided by Applicant do not anticipate the claimed inventions as well as the references alone or further in view of each other do not suggest or motivate one of ordinary skilled in the art to employ the claimed process steps in accordance with The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

However, an appropriate reasonable search and examination of the non-patent and foreign patent literature cannot be properly searched and examined due to the problems as indicated in the above paragraphs 6 and 7.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lilling whose telephone number is 571-272-0918 and Fax Number is **571-273-8300**, or SPE Jon Weber whose telephone number is 571-272-0925. Examiner can be reached Monday-Friday from about 7:30 A.M. to about 7:00 P.M. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

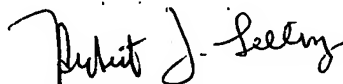
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H.J.Lilling: HJL
(571) 272-0918
Art Unit 1657
January 18, 2008



Dr. Herbert J. Lilling
Primary Examiner
Group 1600 Art Unit 1657